

Notice of Allowability

Application No.

10/785,154

Examiner

Hoan H. Tran

Applicant(s)

MAEDA, KATSUHIKO

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☒ The allowed claim(s) is/are 1-71.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 05/13/2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Allowable Subject Matter

2. Claims 1-71 are allowed.
3. The following is an examiner's statement of reasons for allowance:

Claims 1-13

None of the prior art of record teaches or suggests a color image forming apparatus comprising a correction possibility determination device to determine whether or not deviations in position and errors in magnification ratio of images of individual colors that are superimposed on top of one another to form a full color image can be corrected by detecting each line of the pattern of lines of the pattern image for checking formed on the transfer member with the detection device to output a detection signal and determining if a width of each line of the pattern of lines of the pattern image for checking formed on the transfer member is equal to or greater than a reference value based on the detection signal; wherein the correction possibility determination device determines that deviations in position and errors in magnification ratio of images of individual colors that are superimposed on top of one another to form a full color image can be correctly corrected when the width of each line of the pattern of lines of the pattern image for checking formed on the transfer member has been determined to be equal to or greater than the reference value, and that deviations in position and errors in magnification ratio of

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images of individual colors that are superimposed on top of one another to form a full color image can not be corrected when the width of any one line of the pattern of lines of the pattern image for checking formed on the transfer member has been determined to be not equal to or greater than the reference value.

Claims 14-22

None of the prior art of record teaches or suggests a color image forming apparatus comprising a correction device to perform an operation of correcting deviations in position and errors in magnification ratio of images of individual colors that are superimposed on top of one another to form a full color image, wherein in the operation, a full color pattern image of a pattern of lines for correcting is formed on the transfer member by forming latent pattern images for correcting of individual colors on the image bearing members, the latent pattern images for correcting of individual colors is developed on the image bearing members with toner into pattern images and transferred onto the transfer member, each line of the pattern of lines of the pattern image for correcting formed on the transfer member is detected with the detection device to output a detection signal, and a width of each line of the pattern of lines of the pattern image is determined based on the detection signal and a threshold level; wherein the threshold level used in determining the width of each line of the pattern of lines of the pattern image for correcting formed on the transfer member can be changed.

Claims 23-35

None of the prior art of record teaches or suggests a method of forming a full color image by superimposing images of individual colors in a color image forming apparatus comprising the steps of detecting each line of the pattern of lines of the pattern image for checking formed on

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the transfer member with the detection device to output a detection signal and determining if a width of each line of the pattern of lines of the pattern image for checking formed on the transfer member is equal to or greater than a reference value based on the detection signal; wherein it is determined that deviations in position and errors in magnification ratio of images of individual colors that are superimposed on top of one another to form a full color image can be correctly corrected, respectively, when the width of each line of the pattern of lines of the pattern image for checking formed on the transfer member has been determined to be equal to or greater than the reference value, and that deviations in position and errors in magnification ratio of images of individual colors that are superimposed on top of one another to form a full color image can not be corrected, respectively, when the width of any one line of the pattern of lines of the pattern image for checking formed on the transfer member has been determined to be not equal to or greater than the reference value.

Claims 36-45

None of the prior art of record teaches or suggests a method of forming a full color image by superimposing images of individual colors in a color image forming apparatus comprising the steps of detecting each line of the pattern of lines of the pattern image for checking formed on the transfer member with the detection device to output a detection signal and determining deviations in position and errors in magnification ratio of images of individual colors that are superimposed on top of one another to form a full color image can be correctly corrected by determining if a peak level of the detection signal of each line of the pattern of lines of the pattern image for correcting formed on the transfer member is equal to or lower than a reference value predetermined relative to a threshold level, and that deviations in position and errors in

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magnification ratio of images of individual colors that are superimposed on top of one another to form a full color image can not be corrected when the peak level of the detection signal of any one line of the pattern of lines of the pattern image for correcting formed on the transfer member has been determined to be not equal to or lower than the reference value.

Claims 46-58

None of the prior art of record teaches or suggests a computer readable medium storing computer program instructions which when executed by a computer performs an image forming operation of forming a color image by superimposing images of individual colors in a color image forming apparatus, the operation comprising detecting each line of the pattern of lines of the pattern image for checking formed on the transfer member with the detection device to output a detection signal and determining if a width of each line of the pattern of lines of the pattern image for checking formed on the transfer member is equal to or greater than a reference value based on the detection signal; wherein the correction possibility determination device determines that deviations in position and errors in magnification ratio of images of individual colors that are superimposed on top of one another to form a full color image can be correctly corrected when the width of each line of the pattern of lines of the pattern image for checking formed on the transfer member has been determined to be equal to or greater than the reference value, and that deviations in position and errors in magnification ratio of images of individual colors that are superimposed on top of one another to form a full color image can not be corrected when the width of any one line of the pattern of lines of the pattern image for checking formed on the transfer member has been determined to be not equal to or greater than the reference value.

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Claims 59-68

None of the prior art of record teaches or suggests a computer readable medium storing computer program instructions which when executed by a computer performs an image forming operation of forming a color image by superimposing images of individual colors in a color image forming apparatus, the operation comprising detecting each line of the pattern of lines of the pattern image for checking formed on the transfer member with the detection device to output a detection signal and determining deviations in position and errors in magnification ratio of images of individual colors that are superimposed on top of one another to form a full color image can be correctly corrected by determining if a peak level of the detection signal is equal to or lower than a reference value predetermined relative to a threshold level, and that deviations in position and errors in magnification ratio of images of individual colors that are superimposed on top of one another to form a full color image can not be corrected when the peak level of the detection signal of any one line has been determined to be not equal to or lower than the reference value.

Claims 69 and 70

None of the prior art of record teaches or suggests a method of correcting deviations in position of images of individual colors that are superimposed on top of one another to form a full color image in a color image forming apparatus comprising the steps of determining whether or not deviations in position of images of individual colors that are superimposed on top of one another to form a full color image can be correctly corrected by forming a pattern image for checking on a transfer member of the apparatus and detecting the pattern image for checking formed on the transfer member, correcting deviations in position of images of individual colors

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that are superimposed on top of one another to form a full color image by forming a pattern image for correcting on a transfer member of the apparatus and detecting the pattern image for correcting formed on the transfer member; wherein the correcting is performed when the determining has determined that deviations in position of images of individual colors that are superimposed on top of one another to form a full color image can be correctly corrected.

Claim 71

None of the prior art of record teaches or suggests a method of correcting deviations in position of images of individual colors that are superimposed on top of one another to form a full color image in a color image forming apparatus comprising the steps of determining whether or not deviations in position of images of individual colors that are superimposed on top of one another to form a full color image can be correctly corrected by forming a pattern image for checking on a transfer member of the apparatus and detecting the pattern image for checking formed on the transfer member, correcting deviations in position of images of individual colors that are superimposed on top of one another to form a full color image by forming a pattern image for correcting on a transfer member of the apparatus and detecting the pattern image for correcting formed on the transfer member using a predetermined threshold level; and changing the threshold level used in detecting the pattern image for correcting formed on the transfer member.

Prior Art

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

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- Hada [6,236,827] discloses an image forming apparatus that prevents color deviation of image.
- Kaji [6,701,117] discloses a color image forming apparatus.
- Isobe et al. [5,867,759] disclose a color image forming apparatus with positional deviation detecting pattern.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoan H. Tran whose telephone number is (571) 272-2141. The examiner can normally be reached from 8:30 AM - 5:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Arthur Grimley can be reached at (571) 272-2136. The central office fax number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



**HOAN TRAN
PRIMARY EXAMINER**

HHT
September 04, 2005